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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,821	12/26/2001	Satoshi Shinada	Q67781	4266

7590 09/13/2002

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EXAMINER

LIANG, LEONARD S

ART UNIT	PAPER NUMBER
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2853

DATE MAILED: 09/13/2002

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,821

Applicant(s)

SHINADA ET AL.

Examiner

Leonard S Liang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 44, 51, 131. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: 51'. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claim 15 is objected to because of the following informalities: The claim states, "a contact area between the wall and the protruding portion is wider than a **wide** of an area where the electrodes are arranged." This is not proper grammar. It will be construed that the statement should read, "a contact area between the wall and the protruding portion is wider than a **width** of an area where the electrodes are arranged." Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

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(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1-6, 8-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Seino et al (US Pat 6361138).

Seino et al discloses:

- {claim 1} An ink cartridge for an ink-jet recording apparatus (figure 1, references 1,2);

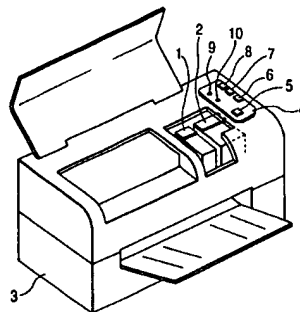
U.S. Patent

Mar. 26, 2002

Sheet 1 of 7

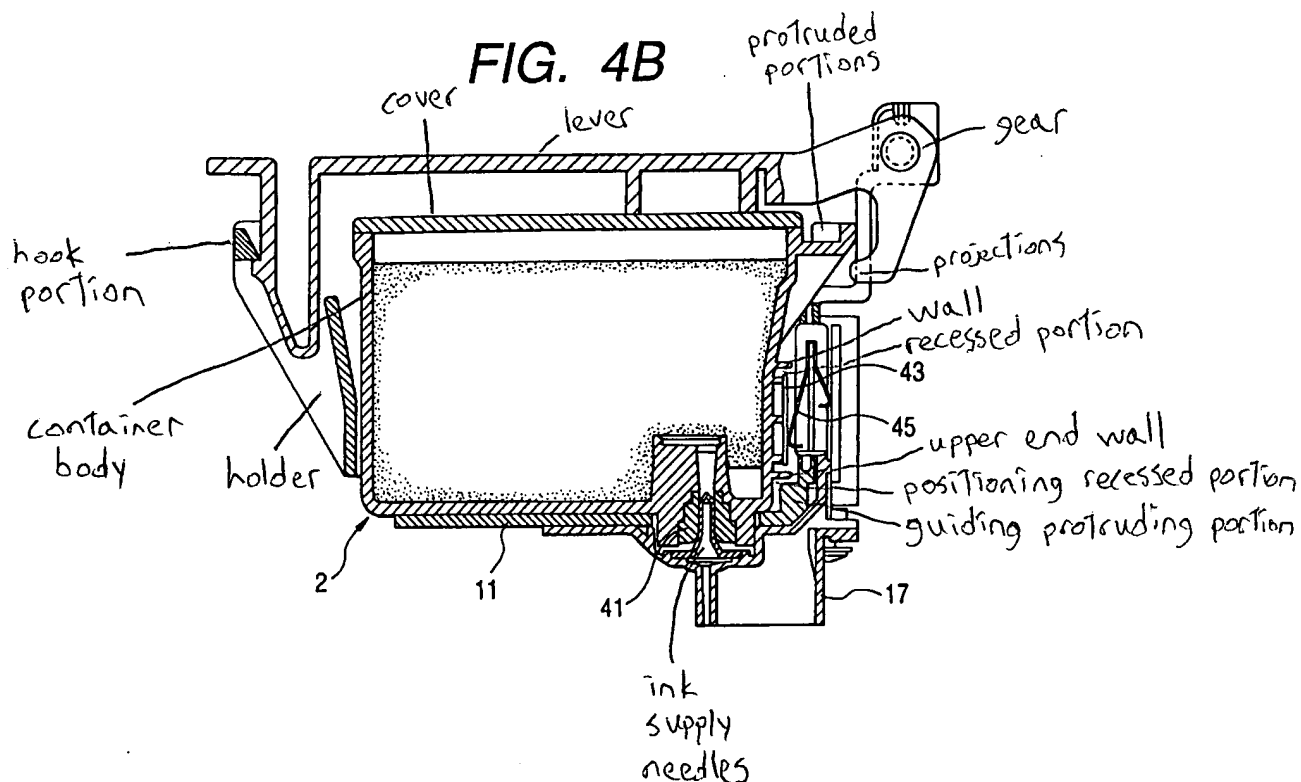
US 6,361,138 B1

FIG. 1



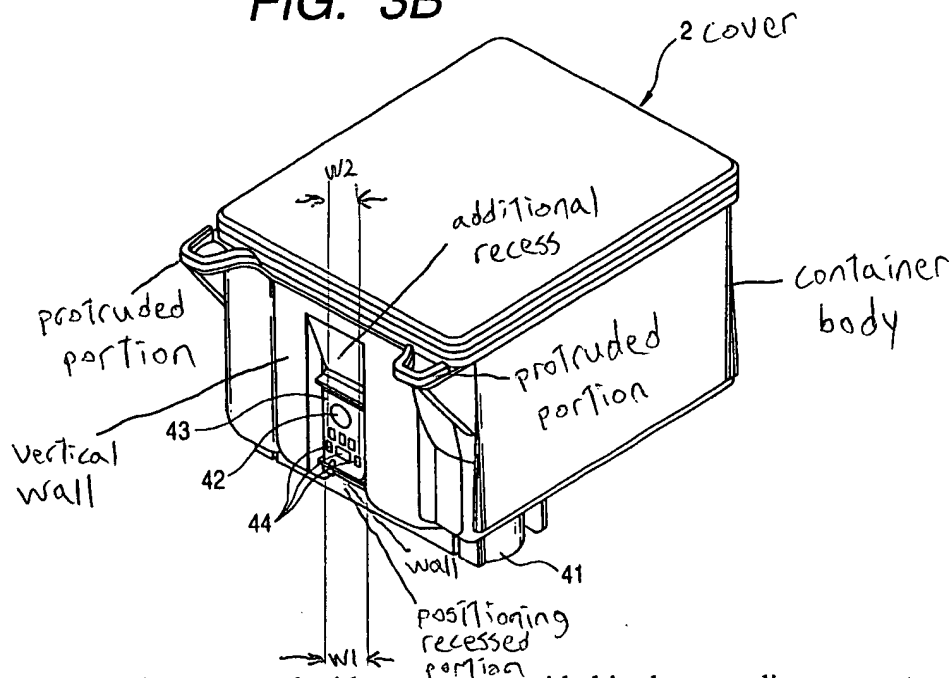
container body having an ink supply port (figure 4B, reference 41; container body drawn in);

FIG. 4B



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a storage element disposed on the container body (figure 3B, reference 42);

FIG. 3B

electrodes to be contacted with contacts provided in the recording apparatus accommodating the container body therein (figure 3B, reference 44; figure 3B, reference 45; contacts represent contact electrodes); positioning system which is formed in the vicinity of the electrodes and is adapted to engage a positioning member of the recording apparatus (figure 4B; hook portion, lever, protruded portions, gear, and projections drawn in; it is seen that when the lever is lifted in a counter-clockwise direction around the gear, the projection engages the protruded portions, which behave as positioning members for the recording apparatus; thus the claim is inherent to the invention)

- {claim 2} positioning system includes at least one recess that has an opening at a leading end thereof in an ink cartridge insertion direction, and that is engageable with the positioning member formed as a protrusion (figure 4B; positioning recessed portion, guiding protruding portion drawn in; it is seen that when the lever is lifted in a counter-clockwise direction around the gear, positioning recessed portion moves away from the guiding protruding portion; thus in the

alternate direction, the recess is engageable with the positioning member; thus the claim is inherent to the invention)

- {claim 3} at least one recess includes a pair of recesses located opposite from each other with respect to the electrodes (figure 3B; additional recess drawn in; it is seen that positioning recessed portion and additional recess are located opposite from each other with respect to the electrodes)
- {claim 4} recess has an upper end wall to be contacted with an upper end of the protrusion (figure 4B; upper end wall drawn in)
- {claim 5} the wall extends in parallel to a direction in which the electrodes are arranged (figure 3B; wall drawn in between contact electrodes and positioning recessed portion; it is seen that the wall extends in parallel to a direction in which the electrodes are arranged)
- {claim 6} a contact area between the wall and the positioning member is wider than a width of an area in which the electrodes are arranged (figure 3B; the width of the area between the wall and the positioning member is [W1] and the width of the area in which the electrodes are arranged [W2] are drawn in; it is seen that $W1 > W2$)
- {claim 8} the storage element and the electrodes are mounted on a same flexible cable (figure 3B, references 42, 44; column 3, lines 19-21; figure 3B shows the storage system being on the same cable strip as the electrodes and column 3 teaches that the storage element is located on a flexible cable; thus it is inherent to the invention that the electrodes are also located on the flexible cable)
- {claim 9} an ink cartridge for an ink-jet recording apparatus, comprising: a container body having an ink supply port; electrodes; a storage element; and a positioning recessed portion open to the side where the ink supply port is provided, and engageable with a protruding portion formed in the recording apparatus (as taught in claims 1 and 2 above)
- {claim 10} circuit board having the electrodes is accommodated in a recessed portion formed in the container body (figure 4B, references 43, 45)

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- {claim 11} the positioning recessed portion is formed at a position below a circuit board having the electrodes (figure 4B, references 43, positioning recessed portion)
- {claim 12} a pair of the positioning recesses are provided to be located to be opposite from each other with respect to the electrodes (as taught in claim 3 above)
- {claim 13} the container body has a recessed portion for accommodating a circuit board having the electrodes, and has a wall which defines the recessed portion and is brought into contact with a top surface of the protruding portion (figure 4B, reference 43, 45, upper end wall, positioning recessed portion, guiding protruding portion)
- {claim 14} the wall extends in parallel to a direction in which the electrodes are arranged (as taught in claim 5 above)
- {claim 15} a contact area between the wall and the protruding portion is wider than a width of an area where the electrodes are arranged (as taught in claim 6 above)
- {claim 16} the storage element is mounted on a circuit board (figure 3B, references 42-43)
- {claim 17} a flexible cable is connected to a circuit board having the electrodes, and the storage element is connected to the electrodes through the flexible cable (figure 3B; column 3, lines 19-21)
- {claim 18} the storage element is mounted on the flexible cable (as taught in claims 8 and 17 above)
- {claim 19} the storage element and the electrodes are mounted on a same flexible cable (as taught in claim 8 above)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seino et al (US Pat 6361138) in view of Faoro (US Pat 5984461).

Seino discloses, with respect to claim 7:

- {claim 1} An ink cartridge for an ink-jet recording apparatus (figure 1, references 1,2); container body having an ink supply port (figure 4B, reference 41; container body drawn in); a storage element disposed on the container body (figure 3B, reference 42); electrodes to be contacted with contacts provided in the recording apparatus accommodating the container body therein (figure 3B, reference 44; figure 3B, reference 45; contacts represent contact electrodes); positioning system which is formed in the vicinity of the electrodes and is adapted to engage a positioning member of the recording apparatus (figure 4B; hook portion, lever, protruded portions, gear, and projections drawn in; it is seen that when the lever is lifted in a counter-clockwise direction around the gear, the projection engages the protruded portions, which behave as positioning members for the recording apparatus; thus the claim is inherent to the invention)
- {claim 2} positioning system includes at least one recess that has an opening at a leading end thereof in an ink cartridge insertion direction, and that is engageable with the positioning member formed as a protrusion (figure 4B; positioning recessed portion, guiding protruding portion drawn in; it is seen that when the lever is lifted in a counter-clockwise direction around the gear, positioning recessed portion moves away from the guiding protruding portion; thus in the alternate direction, the recess is engageable with the positioning member; thus the claim is inherent to the invention)
- {claim 4} recess has an upper end wall to be contacted with an upper end of the protrusion (figure 4B; upper end wall drawn in)

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Seino et al differs from the claimed invention in that it does not disclose that the positioning system includes a blind hole opened at a bottom surface of the container body.

Faoro discloses, with respect to claim 7, a blind hole (Detailed Description of the Preferred Embodiment, paragraph 2, lines 13-18). Faoro teaches that the blind hole serves for puncturing by an ink needle and prevents the needle from causing damage.

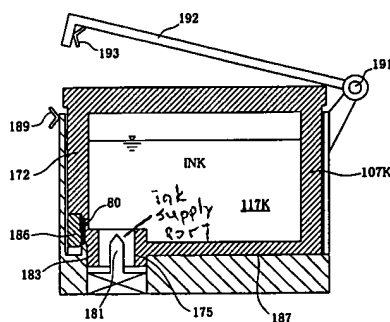
It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the blind hole of Faoro into the invention of Seino et al so that the blind hole is punctured by the ink needle. The motivation for the skilled artisan in doing so is to gain the benefit of preventing the needle from causing damage.

5. Claims 1-6, 8-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Saruta (US Pat 6196670) in view of Nagoshi (US Pat 5980021).

Saruta discloses:

- {claim 1} An ink cartridge for an ink-jet recording apparatus (figure 5, reference 107K);

Fig. 5



container body having an ink supply port (figure 5; reference 107K); a storage element disposed on the container body (figure 5, reference 80); electrodes to be contacted with contacts provided in the recording apparatus accommodating the container body therein (figure 4B, references 185, 186; column 12, lines 9-13);

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Fig. 4A

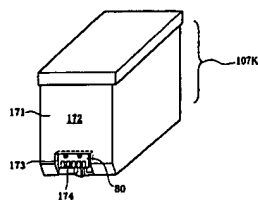
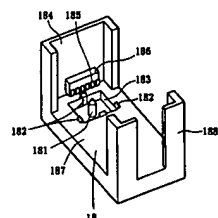
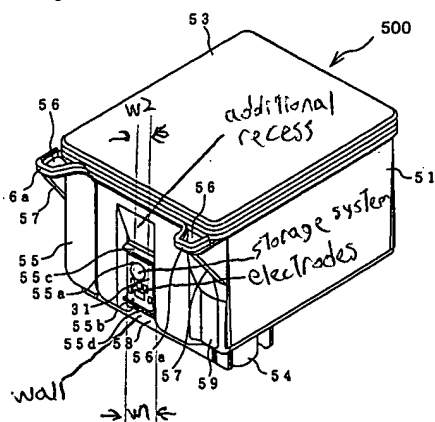


Fig. 4B



- {claim 3} the at least one recess includes a pair of recesses located opposite from each other with respect to the electrodes (figure 16, reference 58; additional recess drawn in)

Fig. 16



- {claim 5} wall extends in parallel to a direction in which the electrodes are arranged (figure 16, reference 58; wall and electrodes drawn in; wall drawn in between electrodes and recess 58; it is seen that the wall extends in parallel to a direction in which the electrodes are arranged)
- {claim 6} a contact area between the wall and the positioning member is wider than a width of an area in which the electrodes are arranged (figure 16; the width of the area between the wall and the positioning member is [W1] and the width of the area in which the electrodes are arranged [W2] are drawn in; it is seen that $W1 > W2$)

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- {claim 8} the storage element and the electrodes are mounted on a same flexible cable (figure 16; storage system and electrodes drawn in)
- {claim 9} an ink cartridge for an ink-jet recording apparatus, comprising: a container body having an ink supply port; electrodes; a storage element (as taught above)
- {claim 10} circuit board having the electrodes is accommodated in a recessed portion formed in the container body (figure 16, reference 31)
- {claim 11} positioning recessed portion (i.e. recess 58) is formed at a position below a circuit board having the electrodes (figure 16, references 31, 58, electrodes)
- {claim 12} a pair of the positioning recesses are provided to be located to be opposite from each other with respect to the electrodes (as taught in claim 3 above)
- {claim 13} the container body has a recessed portion for accommodating a circuit board having the electrodes (figure 16, references 58, wall, electrodes)
- {claim 14} the wall extends in parallel to a direction in which the electrodes are arranged (as taught in claim 5 above)
- {claim 15} a contact area between the wall and the protruding portion is wider than a width of an area where the electrodes are arranged (as taught in claim 6 above)
- {claim 16} the storage element is mounted on a circuit board (figure 16; storage element drawn in)
- {claim 17} a flexible cable is connected to a circuit board having the electrodes, and the storage element is connected to the electrodes through the flexible cable (figure 16; column 12, lines 9-13; column 23, lines 58-65)
- {claim 18} the storage element is mounted on the flexible cable (as taught in claims 8 and 17 above)
- {claim 19} the storage element and the electrodes are mounted on a same flexible cable (as taught in claim 8 above)

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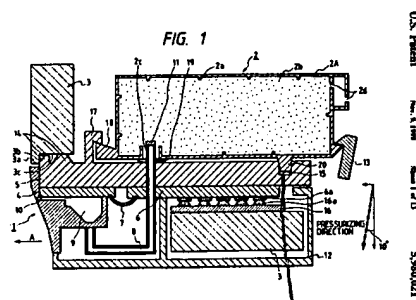
Saruta differs from the claimed invention in that it does not disclose:

- {claims 1 and 9} positioning (recessed) system which is formed in the vicinity of the electrodes (open to the side where the ink supply port is provided) and is adapted to engage a (protruding) positioning member of the recording apparatus
- {claim 2} positioning system includes at least one recess that has an opening at a leading end thereof in an ink cartridge insertion direction, and that is engageable with the positioning member formed as a protrusion.
- {claim 4} recess has an upper end wall to be contacted with an upper end of the protrusion
- {claim 13} the container body has a wall which defines the recessed portion and is brought into contact with a top surface of the protruding portion

Nagoshi et al (US Pat 5980021) discloses:

- {claims 1 and 9} positioning (recessed) system which is formed in the vicinity of the electrodes (open to the side where the ink supply port is provided) and is adapted to engage a (protruding) positioning member of the recording apparatus (figures 1-2, references 15, 20; column 5, lines 48-55; it is seen that the protruding tank guide 20 can be engaged by the recess 15). Nagoshi et al teaches that "By positioning this engaging part close to the action point of the pressurizing hook 13 of the carriage 3 and by separating the ink supply part 2c as far as possible from said action point of the pressurizing hook 13, it is rendered possible to reduce the amount of the pressure on the ink supply part 2c when the carriage is loaded, and to achieve secure coupling of the ink supply path." (column 5, lines 48-55)

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- {claim 2} positioning system includes at least one recess that has an opening at a leading end thereof in an ink cartridge insertion direction, and that is engageable with the positioning member formed as a protrusion (as taught above in claims 1 and 9 above)
- {claim 4} recess has an upper end wall to be contacted with an upper end of the protrusion (as taught in claims 1 and 9 above)
- {claim 13} the container body has a wall which defines the recessed portion and is brought into contact with a top surface of the protruding portion (as taught in claims 1 and 9 above)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the protruding tank guide 20 and recess 15 disclosed by Nagoshi et al into the invention of Saruta et al so that the recess engages the tank guide in forming a positioning system. The motivation for the skilled artisan in doing so is to gain the benefit of achieving secure coupling of the ink supply path, as taught above. The combination naturally suggests that the positioning system includes at least one recess that has an opening at a leading end thereof in an ink cartridge insertion direction, and that is engageable with the positioning member formed as a protrusion; the recess has an upper end wall to be contacted with an upper end of the protrusion; the container body has a wall which defines the recessed portion and is brought into contact with a top surface of the protruding portion.

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saruta (US Pat 6196670) in view of Nagoshi et al (US Pat 5980021), as applied to claim 1 above, and further in view of Faoro (US Pat 5984461).

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Saruta in view of Nagoshi et al differs from the claimed invention in that it does not disclose that the positioning system includes a blind hole opened at a bottom surface of the container body.

Faoro discloses, with respect to claim 7, a blind hole (Detailed Description of the Preferred Embodiment, paragraph 2, lines 13-18). Faoro teaches that the blind hole serves for puncturing by an ink needle and prevents the needle from causing damage.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the blind hole of Faoro into the invention of Saruta in view of Nagoshi et al so that the blind hole is punctured by the ink needle. The motivation for the skilled artisan in doing so is to gain the benefit of preventing the needle from causing damage.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hirabayashi et al (US Pat 5448274) discloses an ink jet recording apparatus and carriage mechanism therefore.

Kashimura et al (5245361) disc a mount arrangement for positioning an ink jet recording head with integral ink tank when the head is mounted to a carriage.

Ohnishi et al (US Pat 5923350) discloses a recording apparatus with improved head installation mechanism.

Watanabe et al (US Pat 5652608) discloses an ink jet recording head, ink jet recording head cartridge, recording apparatus using the same and method of manufacturing the head.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (703) 305-4754. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (703) 308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Application/Control Number: 10/025,821


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

lsl LSL

August 29, 2002



John Barlow
Supervisory Patent Examiner
Technology Center 2800